UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,957,534 B2
APPLICATION NO. : 10/647543
DATED : October 25, 2005
INVENTOR(S) : Wayne R. Lumpkin

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The title page should be deleted to appear as per attached title page.

In Fig. 7, delete section line label "B-B" and insert --8-8--.

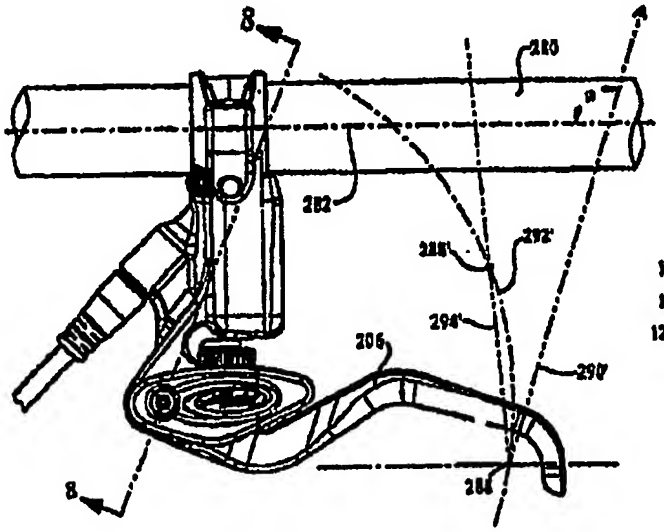

Fig. 7

Amended

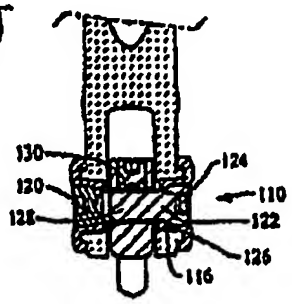

Fig. 8

In Fig. 11, replace number designations "32" with --34--.
In Fig. 11, replace number designations "34" with --32--.

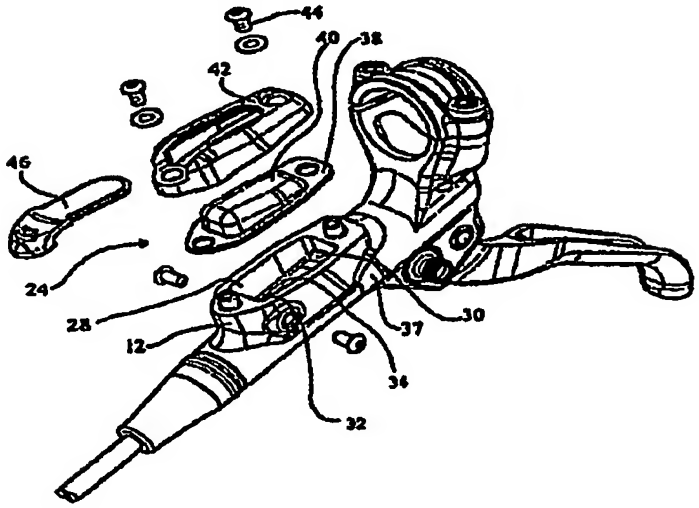

Fig. 11

Amended

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In Fig. 12, replace number designations "32" with --34--.
In Fig. 12, replace number designations "34" with --32--.

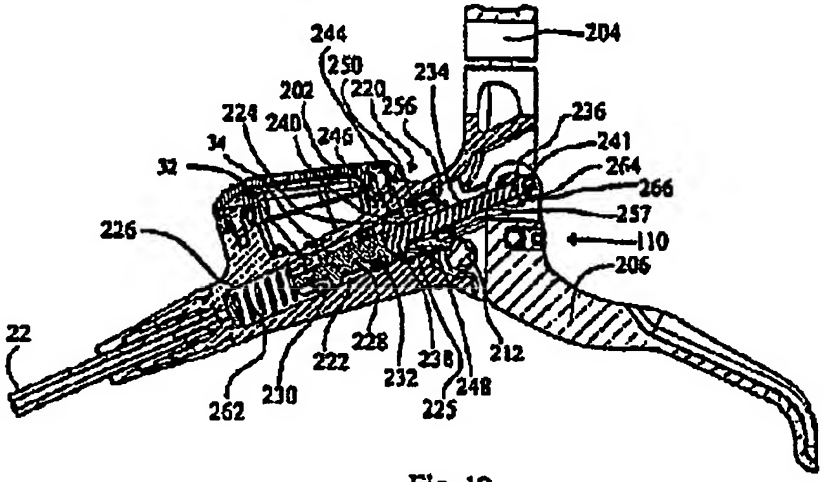

Fig. 12

Amended

At column 4, line 23, delete "line 12-12 of FIG. 1" and insert --line 12-12 of FIG. 10--.
At column 4, line 25, delete "FIG. 1" and insert --FIG. 10--.
At column 4, line 54, delete "24-24" and insert --25-25--.
At column 9, lines 32, delete "34" and insert --32--.
At column 9, line 52, delete "264" and insert --212--.
At column 10, line 17, delete "242" and insert --241--.
At column 11, line 8, delete "900-108" and insert --90°-108°--.
At column 19, lines 60, delete "for moving for piston" and insert --for moving the piston--.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The last two clauses of Claim 21 were truncated in the printing of the patent. Claim 21 in its entirety appears below:

21. A master cylinder for a bicycle hydraulic disc brake, the master cylinder comprising:

a housing defining a cylinder, the cylinder having a first and second end;

a hydraulic fluid reservoir,

a port between the hydraulic fluid reservoir and the cylinder providing fluid communication between the hydraulic fluid reservoir and the cylinder, the port having a port opening located between the first and second ends of the cylinder;

a piston received in the cylinder having a seal operatively associated therewith, the seal having a leading edge, the leading seal edge being moveable between a select starting position with the leading seal edge between the first end and the port opening with the leading seal edge a select distance from the port opening and a pressurized position with the leading seal edge between the port opening and the second end, the leading seal edge preventing fluid flow between the cylinder and the reservoir when positioned between the port opening and the second end to pressurize the second end;

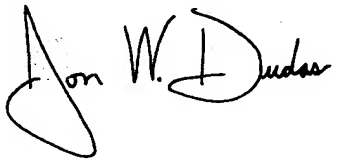
a one piece lever pivotably attached to the housing, the lever being associated with the piston to move the piston between the select starting position and the pressurized position as the lever is pivoted between the rest position and a fully actuated position;

reach adjustment means operatively associated with the lever for varying the rest position of the lever with respect to the housing independently of movement of the select distance between the port opening and the leading seal edge; and

dead band adjustment means operatively associated with the piston for moving the leading seal edge to adjust the select distance between the port opening and the leading seal edge without varying the rest position of the lever.

Signed and Sealed this

Eighth Day of May, 2007



JON W. DUDAS
Director of the United States Patent and Trademark Office

(12) **United States Patent**
Lumpkin

(10) **Patent No.: US 6,957,534 B2**
(45) **Date of Patent: *Oct. 25, 2005**

(54) **REACH ADJUSTMENT MECHANISM FOR A MASTER CYLINDER LEVER OF A HYDRAULIC DISC BRAKE**

(75) Inventor: **Wayne R. Lumpkin, Littleton, CO (US)**

(73) Assignee: **SRAM Corporation, Chicago, IL (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 53 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **10/647,543**

(22) Filed: **Aug. 25, 2003**

(65) **Prior Publication Data**

US 2004/0055840 A1 Mar. 25, 2004

Related U.S. Application Data

(63) Continuation of application No. 10/316,598, filed on Dec. 10, 2002, now Pat. No. 6,804,961.
(60) Provisional application No. 60/416,698, filed on Oct. 7, 2002, provisional application No. 60/416,130, filed on Oct. 4, 2002, and provisional application No. 60/344,450, filed on Dec. 28, 2001.

(51) **Int. Cl.**[7] **B62K 23/06; B62L 3/02**
(52) **U.S. Cl.** **60/588; 60/594; 188/26; 74/502.2; 74/525**
(58) **Field of Search** 60/583, 584, 585, 60/588, 594; 188/502.2, 525; 74/26, 344

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Primary Examiner—Thomas E. Lazo
(74) *Attorney, Agent, or Firm*—Swanson & Bratschun LLC

(57) **ABSTRACT**

A master cylinder for a hydraulic disc brake includes a housing defining a cylinder, the cylinder having a first and second end along its axis. A piston is received in the cylinder and has a radial seal between the piston and the cylinder. A lever is pivotably associated with the housing for pivoting between a rest position and an actuated position relative to the housing. A push rod is operatively associated with the piston and the lever to move the piston axially within the cylinder as the lever is actuated between the rest and actuated positions. A threaded engagement between a first end of the push rod and the lever is configured to cause movement of the rest position of the lever relative to the housing when a rotating force is applied to the push rod causing axial rotation of the push rod. An indexing structure is operatively associated with the push rod for providing index axial rotation of the push rod upon application of the rotating force to the push rod causing axial rotation of the push rod.

21 Claims, 23 Drawing Sheets